

5. 5,106,734, **Apr. 21, 1992**, Process of using light absorption to control enzymatic depolymerization of heparin to produce low molecular weight heparin; Jorgen I. Nielsen, 435/84, 174, 177, 803, 813; 514/50; 536/21 [IMAGE AVAILABLE]

6. 5,034,520, **Jul. 23, 1991**, Process for recovering heparinic oligosaccharides with an affinity for cell growth factors; Jean-Claude Lormeau, et al., 536/127, 21 [IMAGE AVAILABLE]

7. 5,013,724, **May 7, 1991**, Process for the sulfation of glycosaminoglycans, the sulfated glycosaminoglycans and their biological applications; Maurice Petitou, et al., 514/54, 53, 56, 61, 885; 536/21, 54, 55.2, 55.3, 117, 122, 123, 124 [IMAGE AVAILABLE]

8. 4,942,156, **Jul. 17, 1990**, Low molecular weight heparin derivatives having improved anti-Xa specificity; Kevin M. Foley, et al., 514/56, 822; 536/21 [IMAGE AVAILABLE]

9. 4,935,204, **Jun. 19, 1990**, Process and device for the specific adsorption of heparin; Dietrich Seidel, et al., 424/529; 210/646; 424/530; 435/803; 514/822, 833; 536/21; 604/5, 6 [IMAGE AVAILABLE]

10. 4,908,354, **Mar. 13, 1990**, Process for the selective extracorporeal precipitation of low-density lipoproteins; Dietrich Seidel, et al., 514/21; 436/86, 87; 514/54, 55, 56, 61; 530/359 [IMAGE AVAILABLE]

=> d hist

(FILE 'USPAT' ENTERED AT 10:57:21 ON 25 JUL 94)

L1 29 S FLAVOBACTERIUM HEPARINUM
L2 413 S LYASE#
L3 3 S L1 AND L2
L4 24 S HEPARINASE# AND L1
L5 1219014 S I OR II OR III
L6 24 S L4 AND L5
L7 486536 S (1990 OR 1991 OR 1992 OR 1993 OR 1994)/PY
L8 10 S L6 AND L7

=> d hist

(FILE 'USPAT' ENTERED AT 10:57:21 ON 25 JUL 94)

L1 29 S FLAVOBACTERIUM HEPARINUM
L2 413 S LYASE#
L3 3 S L1 AND L2
L4 24 S HEPARINASE# AND L1
L5 1219014 S I OR II OR III
L6 24 S L4 AND L5
L7 486536 S (1990 OR 1991 OR 1992 OR 1993 OR 1994)/PY
L8 10 S L6 AND L7

=> logoff

ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF
LOGOFF? (Y)/N/HOLD:y

U.S. Patent & Trademark Office LOGOFF AT 11:21:07 ON 25 JUL 94

*After
Update
07-25-94*

US PAT NO:	4,935,204 [IMAGE AVAILABLE]	L6: 9 of 24
DATE FILED:	Nov. 14, 1988	
US PAT NO:	4,908,354 [IMAGE AVAILABLE]	L6: 10 of 24
DATE FILED:	Nov. 20, 1987	
US PAT NO:	4,847,338 [IMAGE AVAILABLE]	L6: 11 of 24
DATE FILED:	Jun. 17, 1987	
US PAT NO:	4,826,827 [IMAGE AVAILABLE]	L6: 12 of 24
DATE FILED:	Mar. 21, 1986	
US PAT NO:	4,816,446 [IMAGE AVAILABLE]	L6: 13 of 24
DATE FILED:	Jun. 13, 1985	
US PAT NO:	4,795,703 [IMAGE AVAILABLE]	L6: 14 of 24
DATE FILED:	Mar. 7, 1986	
US PAT NO:	4,745,106 [IMAGE AVAILABLE]	L6: 15 of 24
DATE FILED:	Aug. 20, 1986	
US PAT NO:	4,666,855 [IMAGE AVAILABLE]	L6: 16 of 24
DATE FILED:	Jul. 31, 1985	
US PAT NO:	4,474,770 [IMAGE AVAILABLE]	L6: 17 of 24
DATE FILED:	Aug. 22, 1983	
US PAT NO:	4,443,545 [IMAGE AVAILABLE]	L6: 18 of 24
DATE FILED:	Jan. 8, 1982	
US PAT NO:	4,401,758 [IMAGE AVAILABLE]	L6: 19 of 24
DATE FILED:	Oct. 6, 1980	
US PAT NO:	4,401,662 [IMAGE AVAILABLE]	L6: 20 of 24
DATE FILED:	Oct. 6, 1980	
US PAT NO:	4,396,762 [IMAGE AVAILABLE]	L6: 21 of 24
DATE FILED:	Aug. 24, 1981	
US PAT NO:	4,373,023 [IMAGE AVAILABLE]	L6: 22 of 24
DATE FILED:	Oct. 14, 1980	
US PAT NO:	4,341,869 [IMAGE AVAILABLE]	L6: 23 of 24
DATE FILED:	Aug. 25, 1980	
US PAT NO:	4,281,108 [IMAGE AVAILABLE]	L6: 24 of 24
DATE FILED:	Jun. 2, 1980	

=> d 1-10

1. 5,262,325, **Nov. 16, 1993**, Method for the enzymatic neutralization of heparin; Joseph J. Zimmermann, et al., 435/269, 13, 200 [IMAGE AVAILABLE]

2. 5,198,355, **Mar. 30, 1993**, Purification of glycosaminoglycan degrading enzymes with a sulfated polysaccharide; Hiroshi Kikuchi, et al., 435/232, 177, 179 [IMAGE AVAILABLE]

3. 5,169,772, **Dec. 8, 1992**, Large scale method for purification of high purity **heparinase** from **flavobacterium** **heparinum**;; Joseph J. Zimmerman, et al., 435/232, 252.1, 850 [IMAGE AVAILABLE]

4. 5,145,778, **Sep. 8, 1992**, **heparinase** produced by microorganism belonging to the genus bacillus; Robert W. Bellamy, et al., 435/232, 2, 252.5 [IMAGE AVAILABLE]

14. 4,795,703, Jan. 3, 1989, Heparin assay; Moses J. Folkman, et al., 435/13, 4, 810 [IMAGE AVAILABLE]
15. 4,745,106, May 17, 1988, Heparin derivatives having improved anti-Xa specificity; Charles C. Griffin, et al., 514/56, 822; 536/21 [IMAGE AVAILABLE]
16. 4,666,855, May 19, 1987, Rapid method for determining the isoelectric point for amphoteric molecules; Victor C. Yang, et al., 436/89; 204/182.6; 435/4; 436/163, 164 [IMAGE AVAILABLE]
17. 4,474,770, Oct. 2, 1984, Oligosaccharides having anti-Xa activity, pharmaceutical compositions containing them and method of use; Jean-Claude Lormeau, et al., 514/56; 536/21 [IMAGE AVAILABLE]
18. 4,443,545, Apr. 17, 1984, Process for producing **heparinase**;
Robert S. Langer, Jr., et al., 435/232 [IMAGE AVAILABLE]
19. 4,401,758, Aug. 30, 1983, Process for making oligosaccharides having anti-Xa activity and the resulting oligosaccharides; Jean-Claude Lormeau, et al., 435/84; 514/54, 56, 822; 536/18.7, 21, 55.3 [IMAGE AVAILABLE]
20. 4,401,662, Aug. 30, 1983, Oligosaccharides having anti-Xa activity and pharmaceutical compositions containing them; Jean-Claude Lormeau, et al., 514/56, 54; 536/17.5, 21 [IMAGE AVAILABLE]
21. 4,396,762, Aug. 2, 1983, **Heparinase** derived anticoagulants;
Robert S. Langer, et al., 536/21; 435/269, 850 [IMAGE AVAILABLE]
22. 4,373,023, Feb. 8, 1983, Process for neutralizing heparin; Robert S. Langer, et al., 435/2; 424/94.3, 94.5, 529; 435/178, 180 [IMAGE AVAILABLE]
23. 4,341,869, Jul. 27, 1982, Process for producing **heparinase**;
Robert S. Langer, Jr., et al., 435/232, 815, 850 [IMAGE AVAILABLE]
24. 4,281,108, Jul. 28, 1981, Process for obtaining low molecular weight heparins endowed with elevated pharmacological properties, and product so obtained; Fernando Fussi, 536/21 [IMAGE AVAILABLE]

=> d 1-24 fd

US PAT NO:	5,262,325 [IMAGE AVAILABLE]	L6: 1 of 24
DATE FILED:	Apr. 4, 1991	
US PAT NO:	5,198,355 [IMAGE AVAILABLE]	L6: 2 of 24
DATE FILED:	Aug. 24, 1989	
US PAT NO:	5,169,772 [IMAGE AVAILABLE]	L6: 3 of 24
DATE FILED:	Jul. 2, 1991	
US PAT NO:	5,145,778 [IMAGE AVAILABLE]	L6: 4 of 24
DATE FILED:	Nov. 22, 1989	
US PAT NO:	5,106,734 [IMAGE AVAILABLE]	L6: 5 of 24
DATE FILED:	Apr. 29, 1987	
US PAT NO:	5,034,520 [IMAGE AVAILABLE]	L6: 6 of 24
DATE FILED:	Apr. 16, 1987	
US PAT NO:	5,013,724 [IMAGE AVAILABLE]	L6: 7 of 24
DATE FILED:	Jul. 11, 1986	
US PAT NO:	4,942,156 [IMAGE AVAILABLE]	L6: 8 of 24
DATE FILED:	Aug. 20, 1986	

d 0124

1. 5,262,325, Nov. 16, 1993, Method for the enzymatic neutralization of heparin; Joseph J. Zimmermann, et al., 435/269, 13, 200 [IMAGE AVAILABLE]
2. 5,198,355, Mar. 30, 1993, Purification of glycosaminoglycan degrading enzymes with a sulfated polysaccharide; Hiroshi Kikuchi, et al., 435/232, 177, 179 [IMAGE AVAILABLE]
3. 5,169,772, Dec. 8, 1992, Large scale method for purification of high purity **heparinase** from **flavobacterium** **heparinum**;; Joseph J. Zimmerman, et al., 435/232, 252.1, 850 [IMAGE AVAILABLE]
4. 5,145,778, Sep. 8, 1992, **Heparinase** produced by microorganism belonging to the genus bacillus; Robert W. Bellamy, et al., 435/232, 71.2, 252.5 [IMAGE AVAILABLE]
5. 5,106,734, Apr. 21, 1992, Process of using light absorption to control enzymatic depolymerization of heparin to produce low molecular weight heparin; Jorgen I. Nielsen, 435/84, 174, 177, 803, 813; 514/56; 536/21 [IMAGE AVAILABLE]
6. 5,034,520, Jul. 23, 1991, Process for recovering heparinic oligosaccharides with an affinity for cell growth factors; Jean-Claude Lormeau, et al., 536/127, 21 [IMAGE AVAILABLE]
7. 5,013,724, May 7, 1991, Process for the sulfation of glycosaminoglycans, the sulfated glycosaminoglycans and their biological applications; Maurice Petitou, et al., 514/54, 53, 56, 61, 885; 536/21, 54, 55.2, 55.3, 117, 122, 123, 124 [IMAGE AVAILABLE]
8. 4,942,156, Jul. 17, 1990, Low molecular weight heparin derivatives having improved anti-Xa specificity; Kevin M. Foley, et al., 514/56, 822; 536/21 [IMAGE AVAILABLE]
9. 4,935,204, Jun. 19, 1990, Process and device for the specific adsorption of heparin; Dietrich Seidel, et al., 424/529; 210/646; 424/530; 435/803; 514/822, 833; 536/21; 604/5, 6 [IMAGE AVAILABLE]
10. 4,908,354, Mar. 13, 1990, Process for the selective extracorporeal precipitation of low-density lipoproteins; Dietrich Seidel, et al., 514/21; 436/86, 87; 514/54, 55, 56, 61; 530/359 [IMAGE AVAILABLE]
11. 4,847,338, Jul. 11, 1989, Low molecular weight heparin fragments as inhibitors of complement activation; Robert J. Linhardt, et al., 536/54 [IMAGE AVAILABLE]
12. 4,826,827, May 2, 1989, Short chained oligosaccharides having biological properties, a process for making the same and the use thereof as drugs; Jean-Claude Lormeau, et al., 514/56; 536/21, 55 [IMAGE AVAILABLE]
13. 4,816,446, Mar. 28, 1989, Heparin derivatives; Wolfgang Heller, et al., 514/56, 822; 536/21 [IMAGE AVAILABLE]